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ABSTRACT

In response to Florida's Auditory General's recommendation that the Florida Bureau of Apprenticeship (FBA) be terminated, the benefits of apprenticeship were examined. Participation in apprenticeship programs provides social and economic benefits to participants, their communities, the state, and the nation. School-to-work programs, U.S. versions of European apprenticeships, should blend vocational and academic education in high schools, provide students with meaningful work experience, and continue their training after high school. Apprenticeship's economic value is apparent to the program completers and, by extension, to the local, state, and national economies. Opportunities for program participation should be enhanced and expanded, especially for women. minority populations, and adolescents. The elimination of the state service to apprenticeship programs in Florida would result in obstruction of the pursuit of these goals and the net loss of revenue to state and local governments. The Florida Council on Vocational Education makes three recommendations: the FBA should be retained; initiatives by state officials to extend the opportunities of apprenticeship should continue; and the state board should promote additional programs linking school and apprenticeship. (Three tables, an appendix on the benefits of starting apprenticeship while in high school, and 28 references are included.) (NLA)

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THE BENEFITS OF APPRENTICESHIP: Implications for Public Policy in Florida

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THE FLORIDA COUNCIL ON VOCATIONAL EDUCATION

January 1992

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THE BENEFITS

OF APPRENTICESHIP:

Implications for Public Policy in Florida

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THE BENEFITS OF APPRENTICESHIP:
Implications for Public Policy in Florida

POSITION STATEMENT

The Florida Council on Vocational Education has historically favored responsible economic development in the Sunshine State. Likewise, the Council has persistently favored increasing and expanding educational and economic development opportunities for students of all ages and especially for women and members of minority populations. The Florida Council on Vocational Education has also maintained a long standing interest in apprenticeship, as evidenced by Council co-sponsorship and publication of *A Study of the Dual System: The Occupational Training System in the Federal Republic of Germany*, which was prepared by Dr. Carl W. Proehl in 1983.

It was for these reasons that the recommendation of the Auditor General of the State of Florida that the Florida Bureau of Apprenticeship be terminated was brought to the attention of the Florida Council on Vocational Education at public meetings in Pensacola (June 1991) and Tampa (August 1991).

In the June 30, 1991 edition of the *Annual Report* of the Office of the Auditor General of the State of Florida, the significant audit findings and recommendations of *Report No. 11570* are summarized as follows:

> The Legislature should discontinue the State Apprenticeship Program. The functions of the State Program could be assumed by the Federal apprenticeship program which is currently operating in the State, thus saving approximately $900,000 in State general revenue funding. [p. 82]

While we applaud the efforts of the Office of the Auditor General to reduce expenditures from general revenue funds, the Florida Council on Vocational Education finds this recommendation to be overly optimistic. Although the federal apprenticeship program, with its three (3) operatives within the state, could theoretically assume oversight of Florida's hundreds of apprenticeship programs and thousands of apprentices, it seems unlikely that the current level of service could be maintained.

The members of the Council base this view on two sources: (1) an examination of support services to apprenticeship programs in neighboring states and (2) the testimony of Administrator James D. Van Erden of the Office of Work-Based Learning in the United States Department of Labor. The Council's inquiries into the activities of neighboring states found not a single case of a state in which more than 7,000 apprentices are served by only three operatives. The federal view of such a possibility is clearly spelled out in a letter to the state bureau. In this missive Van Erden wrote as follows:

> In this time of tight budget constraints I think it unrealistic to anticipate that BAT would be able to take over the total responsibility in Florida for the apprenticeship system. Our current staff level of three would be maintained.

The Florida Council on Vocational Education therefore concurs with another view expressed by Van Erden in the same letter. He wrote, and the Council agrees, that "The State of Florida has operated a very commendable apprenticeship program for many years and we strongly believe it is advantageous to the state and its citizens to continue to address their skilled worker needs, both now and in the future, through such efforts."

Reduction in service to apprenticeship would result in a net loss of tax revenue to the state that could easily exceed the cost of maintaining the Florida Bureau of Apprenticeship. Citizens and businesses would also be adversely affected. We calculate that the added value provided to the state by the completion of each individual apprenticeship, on the average, is equal to $4,887 in extra wages, resulting in an added community economic impact of $12,219 and the subsequent contribution of $733 in sales tax revenue each year.

Furthermore, in such a situation, it would be extremely unlikely for expansion of service to programs and apprentices to take place. The Florida Council on Vocational Education maintains that the social and economic benefits to the individuals who complete apprenticeship programs, to the businesses who rely on the services of apprenticeship program participants and completers, to the educational institutions that provide related training, and particularly to the tax base of the state are sufficient to merit expansion of apprenticeship services in Florida.

The Council further asserts that it is through expansion into new fields of endeavor, beyond the traditional, and through the development of new programs that the benefits of apprenticeship can best be provided to women, members of minority populations, and adolescents. To achieve this expansion, the state of Florida should continue to operate its "very commendable apprenticeship program."

In short the Council perceives that support for the state apprenticeship program is an investment in our future. The importance of such investments is succinctly stated in the *Final Report* of the Governor's Commission for Government by the People.

> Florida's greatest asset is her people. And yet, state government invests very little in developing that asset. Turning that equation around is the key to transforming Florida from a low-wage to a high-wage economy. [p. 14]

The Social Value of Apprenticeship

Apprenticeship has been a highly valued means of education for employment for millennia. Its value was accentuated with the collapse of the authority of the Caesars and the subsequent rise of the importance of the guild system to commerce in medieval Europe. Apprenticeship remains highly valued in Europe to this day, with the most commonly cited example being the German system.

Although apprenticeship in America is less widespread than it is in Germany, where it is in effect it is highly successful. Its strength is derived from a combination of factors, including learning by doing, earning while learning, employer involvement, student commitment, and certification of competency attainment that is recognized throughout the nation. It is so successful, in fact, that a continually increasing chorus of voices advocates the expansion of apprenticeship programs and the incorporation of elements of apprenticeship throughout the educational system.

The voices contributing to this chorus include those of such diverse proponents as university professors, presidential candidates, national associations and councils, and federal agencies. They maintain that apprenticeship is valuable to participants, businesses, schools, and society as a whole. Some excerpts from their appeals may be illuminating. For the most part they advocate apprenticeship as a means of dealing with the problem of American decline in the face of stiffening international competition. This problem is clearly stated, as follows, in a publication of the National Center on Education and the Economy entitled *America's Choice: high skills or low wages!*

> Other industrial nations have multi-year career-oriented educational programs that prepare students to operate at a professional level in the workplace. Graduates of these programs have the skills to hit the ground running when they get their first full-time job at age 19 or 20. America prepares only a tiny fraction of its non-college bound students for work. As a result, most flounder in the labor market, moving from low paying job to low paying job until their mid-twenties, never being seriously trained. [p. 6]

Professor Steven Hamilton of Cornell University addressed the problem from an international perspective. In *Apprenticeship for Adulthood*, he wrote that "Apprenticeship in various forms represents a strategic investment because it simultaneously meets employers needs and contributes to strengthening schools." [p. 29] "West Germany's apprenticeship system," he noted, "demonstrates that with opportunities for training, relevant school learning, and access to adult jobs, young people are capable of assuming adult work roles much sooner than is common in the United States." [p. 36]

Governor Bill Clinton of Arkansas, alarmed by high dropout rates and low rates of earnings for American youth, advocated expansion of apprenticeship in an article he wrote for the *Vocational Education Journal*.

> It is important that every community in every state of this nation develop more school-to-work programs. The best alternative is to craft an American version of European apprenticeships--not necessarily just like the German system, but one that blends vocational and academic education in high school, provides students meaningful work experience and continues their training after graduation. . . . A good comprehensive apprenticeship program would:
>
> - Expand America's supply of well-trained workers;
> - Narrow the workforce earnings gap that exists now;
> - Create an incentive for young people to stay in school and live a life free of crime, drugs, and teen pregnancy. [pp. 22-23]

Phrases such as "meaningful work experience" suggest a concern for relevance. The relevance issue in reference to learning as well as to working is often discussed by those, including Governor Clinton and Professor Hamilton, who are struggling to stem the tide of school dropouts.

The basic argument is that students who perceive that their school subjects have some relevance to improving their lives after they leave school are less inclined to drop out before graduation. In "Raising Standards and Reducing Dropout Rates," published in the Columbia University *Teachers College Record*, Hamilton noted that effective dropout prevention programs "share some common features that raise important issues regarding the nature of schools and school programs that might reduce dropping out." [p. 416]

The four characteristics noted by Hamilton are enumerated below.

1. Separation and placement--Potential dropouts are separated from other students and placed in programs that differ markedly from the ordinary high school experience.

2. A strong vocational emphasis--Students learn practical, often job-related skills in school and apply academic learning to real-life situations.

3. Outside learning--Much learning occurs outside the classroom, often in connection with paid employment.

4. Intensity--Effective programs have low student/teacher ratios, individualized instruction, strong counseling components, and small size.

In *Solutions*, a document recently published by the National Council on Vocational Education, that council explains the advantage of relevance in "traditional" apprenticeships.

> The activities to which the apprentice is a witness and, by stages, a contributor, are organized around work to be done, and whatever teaching or learning may happen is coincidental to that overriding concern. As a consequence the progressive mastering of tasks by the apprentice is appreciated not so much as a step toward a distant symbolic goal (such as a certificate) but for its immediate use value. Apprentices are not so much "practicing for the real thing" as doing useful and necessary tasks. [p. 15]

The value of apprenticeships to employers and schools is emphasized in the United States General Accounting Office Report to Congressional Requesters entitled *Transition from School to Work: Linking Education and Worksite Training.*

> Apprenticeship programs enable employers to address their needs for skilled workers by accessing a new pool of labor from which to recruit. Schools benefit by gaining direct linkage with business and industry. For example, schools have modified vocational curriculums after gaining increased knowledge of employer needs through association with apprenticeship. [p. 38]

It is thus clear that, from a broad perspective, apprenticeship is an educational approach of considerable value to society. Its expansion would be, therefore, beneficial to the nation.

As the cited authors suggest, a priority target group for the expansion of apprenticeship in the United States should be in-school youth. In fact, the Governor's Commission for Government by the People specifically recommended that this course of action be adopted in Florida.

> Finally, we propose that the state require high schools to offer a well-defined "career prep" course of study after 10th grade, as an alternative to the "college prep" path. This curriculum, which should include apprenticeship experiences in work settings, will provide relevant choices for those students who do not intend to go on to college. [p. 16]

As the Auditor General's *Report No. 11570* notes, The Florida Apprenticeship Program has yet to serve large numbers of in-school youth. [p. 14] However, with the recommendations of such groups as the Governor's Commission for Government by the People and the Florida Council on Vocational Education, along with the cooperation of local school districts, the extant and extensive expertise now in service to the state program could be used to increase service to adolescents.

Rule 6A-6.077 of the State Board of Education provides a basis on which to build programs linking high-school students with apprenticeship. There are also active model programs in other states that could be adapted to Florida. One example is Alabama's Student Apprenticeship Linkage Program (SALP) identified by James Van Erden in "Linking Past & Present, Students & Jobs." Another example is Ohio's West Clermont Career Center School-to-Apprenticeship Program identified by the Maryland State Council on Vocational Education in *Feasibility of a Formal Apprenticeship Program in Maryland Public Schools.*

A notable effort along these lines has been launched in North Carolina. To facilitate the process of initiating programs linking in-school youth to apprenticeship North Carolina Department of Public Instruction, Division of Vocational Education Services, working in conjunction with the North Carolina Department of Labor, issued the *High School Apprenticeship Handbook* in August 1991. The document contains an extensive list of the "Benefits of Starting Apprenticeship While in High School" for students, businesses, industries, and the community. This list of benefits is provided in the Appendix.

Economic Value of Apprenticeship

In addition to its social value and educational effectiveness, apprenticeship has a significant economic value to those who successfully complete programs and, by extension, to the various economies, local, state, and national. Consideration of the economic value to the citizens and the government of Florida is therefore in order.

For insight we must first turn to the published research on apprenticeship programs in the United States. In 1989 the *Analysis of Apprenticeship Training from the National Longitudinal Study of the High School Class of 1972* was published. Prepared for the Bureau of Apprenticeship and Training of the United States Department of Labor, Employment and Training Administration and for the National Training Program of the International Union of Operating Engineers, this extensive study focused on labor market success. It compared the performance of 1972 graduates who had completed apprenticeship programs with a control group of similarly employed 1972 graduates who had not.

The report compared such things as earnings differences and job satisfaction. For example, it showed that in 1985 males who had completed apprenticeships earned 33 percent more than their comparisons and females who had completed apprenticeships earned 50 percent more than their comparisons. [pp. 2-15, 2-16]

A Likert scale was used to measure job satisfaction. As can be seen in the following excerpt, apprenticeship completers expressed greater overall job satisfaction. [p. 2-27]

Satisfaction with Job as a Whole
1986
(percent)

	Apprentices	Comparisons
Very Satisfied	24.7	17.5
Satisfied	61.5	61.8
Dissatisfied	12.1	13.6
Very Dissatisfied	1.2	4.5
Don't Know	0.6	2.7

Accompanying the publication of *Analysis of Apprenticeship*, the Industrial Relations Research Association hosted a symposium during its annual meeting at which the findings were considered. At this meeting Robert Cook, the principal researcher of *Analysis of Apprenticeship*, and Lynn Cairnes presented their analysis in a paper entitled "The Effects of Participation in Apprenticeship Training." The following excerpts from the *Proceedings* provide useful summarization and insight derived from the 1989 study as well as from earlier work by Marshall, Glover, and Franklin (*Training and Entry into Union Construction*) and by Stephen Hills ("How Craftsmen Learn Their Skills: A Longitudinal Analysis").

> Apprentices are better educated, more productive, learn new skills faster, are promoted more often, suffer less unemployment, and earn more than people who learn their skills in other ways.
>
> The implicit assumption of this analysis is that Apprenticeship could profitably be expanded. There are many more people who are motivated to participate in Apprenticeship than do participate. In fact, the magnitude of the returns to participation in an Apprenticeship program suggest that economic rent is being earned by those selected to participate.
>
> A corollary to this conclusion that emanates from the results of this study is the desirability of including females, and particularly minority females, in any expansion of the Apprenticeship concept. [Robert F. Cook and K. Lynn Cairnes, *passim*]

In applying these findings to Florida, in order to assess the economic impact of apprenticeship completers, we must first determine an average wage. Fortunately, the

Auditor General's *Report No. 11570* on apprenticeship includes an appendix in which the testimony of the Secretary of Labor and Employment Security on this particular point is included. According to the publication, "the average minimum wage for journeymen across all programs is $10.59, excluding benefits." [p. 35]

During the time period in which these wages were calculated, 1,254 apprentices received their certificates of completion in Florida. Assuming a 40-hour work week and a 50-week work year, this class of apprentices could be expected to earn $26,559,720. A comparison group without the advantages of apprenticeship, according to the profile provided in *Analysis of Apprenticeship,* would be expected to earn, depending on the number of females in the sample, between $17,706,480 and $19,969,714. Even using the higher figure, the value-added benefit of apprenticeship to the completers in wages alone is $6,590,006.

The benefit does not stop with the earners, however. Businesses and communities benefit when this additional income is used to acquire goods and services. Although there are various formulae for calculating this economic impact, the staff of the Florida Legislature uses a multiplier of 2.5 in order to estimate sales tax revenues. By applying the 2.5 multiplier, we deduce the economic impact of the "extra" $6,590,006 on businesses and communities to be $16,475,015. That impact yields $988,500 in state sales tax revenues in a single year.

It must also be remembered that all apprentices earn incomes based on journeyman pay while participating in certified programs. Consequently, their incomes also exceed those of comparable nonparticipants. But even without taking their contributions into consideration, it is clear that the sales tax revenues generated just from the extra income of a single year's class of apprentice program completers is more than sufficient to fund the operation of the Florida Bureau of Apprenticeship.

The increased earning, spending, and revenue supplying capacity of apprenticeship program completers, it must be remembered, continues throughout their working lives. It is therefore readily apparent that providing support for the maintenance and expansion of apprenticeship constitutes an investment in the economic health of the citizens, communities, businesses, and government of Florida and the nation.

The Instrumentality of Administration

In some states, including Florida, apprenticeship is monitored by a State Apprenticeship Council (SAC). In these states the bulk of the responsibility for registering and tracking apprentices, certifying apprenticeship program standards, and promoting the development of new programs is carried by state governments. In other states these responsibilities are borne by the federal government through the agency of Bureau of Apprenticeship and Training (BAT) personnel.

The following chart shows the states that make up BAT Region IV, which is administered from Atlanta. Reading from left to right it shows: the state; the agency of greatest responsibility; the number of BAT employees in the state, in brackets; the population of the state in millions, the number of participating apprentices; the number and percentage of females who participate; the number and percentage of participants who belong to minority populations; and a ratio of the number of apprenticeship participants to the population of the state.

The BAT employs a state director and a secretary in each state. In most states area training representatives (ATRs) are also employed. Thus, Alabama has a state director, a secretary, and an ATR, but Tennessee has a state director, a secretary, and three ATRs. Since state directors also carry out the functions of ATRs, in addition to their other duties, the average workload for a state BAT office in a non-SAC state may be gauged by subtracting one, the secretary, from the total BAT workforce and dividing the result into the number of apprentices. An exception is Georgia, where three additional employees maintain the regional headquarters in Atlanta.

As the table shows, it is necessary to look to states neighboring the region in order to find a southeastern state with as many apprentices as Florida. Both Texas (a BAT state) and Virginia (a SAC state) serve more than 7,000 apprentices, as does Florida. Each is remarkable in some aspect. Texas has a noteworthy high percentage of minority participation (nearly 28 percent) and Virginia has a notably high percentage of female participation (more than 15 percent).

Dave Barrett of the BAT office in Dallas attributed the success of minority recruitment for apprenticeship in Texas to the "hard work and dedication of ten federal representatives, one of whom is a secretary" (personal communication, November 26, 1991). George Eanes of the Virginia Department of Labor and Industry credited the maintenance of eight regional offices (including the state headquarters in Richmond) and the efforts of the state officials in developing new programs with the successful recruitment of females into apprenticeship. In particular, Eanes noted that apprenticeship programs for cosmetology, barbering, and dispensing optician had a noticeable appeal to women (personal communication, December 2, 1991).

Participants in Apprenticeship Programs 07/02/90 - 09/30/90
Region IV {Atlanta}
(Population in Millions)

State	BAT/SAC	Pop.	App.	Fem. #/%	Min. #/%	Ratio
Alabama	BAT [3]	3.98	2,229	80/3.6	265/12	1:1,745
Florida	SAC [3]	12.77	7,330	429/5.8	1,256/17.2	1:1,742
Georgia	BAT [6]	6.38	2,920	208/7.17	638/22	1:2,185
Mississippi	BAT [3]	2.53	1,622	153/9.5	431/26.9	1:1,560
N. Carolina	SAC [2]	6.55	data reporting is incomplete			
S. Carolina	BAT [3]	3.40	1,367	200/14.6	285/20.8	1:2,487
Tennessee	BAT [5]	4.82	5,504	293/5.3	1,294/23.5	1:876

Participants in Apprenticeship Programs 07/02/90 - 09/30/90
Virginia and Texas
(Population in Millions)

State	BAT/SAC	Pop.	App.	Fem. #/%	Min. #/%	Ratio
Texas [10]	BAT	16.82	8,431	545/6.4	2,342/27.8	1:1,995
Virginia [3]	SAC	6.13	7,785	1,193/15.5	1,578/20.26	1:787

Sources: U.S. Department of Labor, Bureau of Apprenticeship and Training, *AMS Report 003* (participants), BAT Regional Offices in Atlanta, Dallas, and Philadelphia (federal operatives), *World Almanac and Book of Facts* (state populations).

As the following table shows, average workload ratios vary from state to state.

BAT Workload Ratios in non-SAC States 07/02/90 - 09/30/90
Region IV {Atlanta}

State	Number of Workers (SD + ATRs)	Number of Apprentices	Workload Ratio
Alabama	2	2,229	1:1,114
Georgia	3	2,920	1:973
Mississippi	2	1,622	1:811
South Carolina	2	1,367	1:684
Tennessee	4	5,504	1:1,376
AVERAGE	*2.6*	*2,728*	*1:1,049*

In the event that Florida were to sacrifice its state supported apprenticeship operations and "let George do it," the Florida-based BAT personnel would have to assume and average workload ratio of 1:3,665, assuming the number of apprentices has not increased, in order to maintain the current level of service. That figure is more than three times the average workload and more than double that of the current highest workload ratio in the region.

Therefore, it seems unlikely that current levels of service could be maintained. The development of new programs designed to attract greater participation of women, minorities, and adolescents seems even less likely.

Activities of the Florida Bureau of Apprenticeship

The activities of the Florida Bureau of Apprenticeship have furthered the aims of the Florida Council on Vocational Education in terms of enhancing and expanding opportunities for women and minorities to gain access to education for high-wage employment. The Florida Bureau of Apprenticeship *Report for FY 90-91* contains the following entries.

> The number of females participating in apprenticeship increased by 44 percent this past year. Females involved in registered apprenticeship have increased by more than 100 percent in the last 3 years. [p. 3]
>
> The number of participating minorities increased by 14 percent, to 1,350, during the past year. This represents a gain of 60 percent in minority participation since FY 88-89. [p. 3]

According to the report, these increases are attributable to increased awareness and recruitment activities, such as Women's Seminars, and to the development of new programs, such as Child Care Specialist. Forty-three new programs were developed during FY 90-91.

CONCLUSION

Participation in apprenticeship programs provides considerable social and economic benefits to participants, their communities, the state, and the nation. Opportunities for participation in apprenticeship programs should be enhanced and expanded, especially for women, members of minority populations, and adolescents. The elimination of the state-supplied service to apprenticeship programs in Florida would result in obstruction of the pursuit of these goals and the net loss of revenue to state and local governments.

RECOMMENDATIONS

The Florida Council on Vocational Education recommends that the Florida Bureau of Apprenticeship or an equivalent entity be retained.

The Florida Council on Vocational Education recommends that initiatives by state officials to extend the opportunities of apprenticeship to the people of Florida be encouraged to continue.

The Florida Council on Vocational Education further recommends that the State Board for Vocational Education endorse the promotion of additional programs linking school and apprenticeship developed in cooperation with school districts, community colleges, and the Florida Bureau of Apprenticeship.

APPENDIX

Benefits of Starting Apprenticeship While in High School
from *High School Apprenticeship Handbook* [pp.7-8]

High School apprenticeship offers benefits for the students, businesses, industries, and the community. Some of these benefits are listed below.

Benefits for the Students:

A. Students have the opportunity for learning useful employment skills on real jobs under actual working conditions.

B. Interest in classroom work is stimulated by the application of academic and job-related learning in job situations.

C. As wage earners, students develop understanding, appreciation, and respect for work and workers.

D. The ability to get and hold a job helps young people develop a mature and realistic concept of the self.

E. The transition from school to employment is made easier.

F. The ability of the student to develop a "post-high school plan," including employment and continuing education, is enhanced.

G. Students earn credits toward graduation and apprenticeship simultaneously.

Benefits for the Employers/Training Sponsors:

A. Employers are assisted in analyzing jobs and developing training outlines.

B. The private sector is provided with opportunities to take an active part in education.

C. Employers who participate in apprenticeship on-the-job training receive the benefits of the school's testing and guidance services.

D. Students are prepared to work in their own localities, under their supervision, and following the methods of a specific local employer.

E. Training time is shortened, which reduces employer training costs.

Benefits for the School:

A. A school that conducts apprenticeship on-the-job training is able to extend educational opportunities that are beyond its own physical and financial resources.

B. Skills and knowledge of outstanding individuals outside the school are utilized in the training of young people.

C. Teachers, guidance counselors, and school administrators area provided with improved opportunities to keep in touch with changing employment conditions.

D. Apprentice education and training is a living demonstration of the concept that education is indeed a community-wide responsibility.

Benefits for the Community

A. The number of young people who fail to make a successful transition from school to work is lessened, thereby reducing the number of economically unproductive members of society.

B. A continuing pattern of school-community relationships is developed.

C. Apprenticeship education and training helps improve the community's pattern of job stability by giving local students job skills and civic competence.

D. An apprenticeship program can help attract additional industries to a community.

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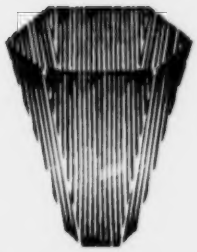

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Department of Education
Tallahassee, Florida
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